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27 Intt. Fever

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A Dissertation,

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W. E. H
Dean

On;

Intermittent Fever.

Submitted to the examination of the,

Medical Faculty.

of the;
University of Pennsylvania,

For the Degree of Doctor of Medicine,
by.

Fisher James Snow.

An Inaugural dissertation, being required of every student of Medicine in the university of Pennsylvania, before he Graduates, in order to comply with this prominent requisition. I am induced to offer the following observations, on Intermittent Fever; The little experiance, that I have had in treating diseases, will I hope be a sufficient apology, for any imperfections, that may occur in this Juvenile attempt.

Intermittent, is applied to that kind of Fever which consists of a succession of paroxysms, between each of which, there is a distinct and perfect intermission from febrile symptoms, or an apyrexial period.
Different names have been applied to this fever, according to the distance of time observed between the periods of its return. When it comes on within the space of ~~twenty-four~~ hours, it is called a Quotidian;

When it returns every other day, or there is a space of forty-eight hours, between its attacks, it is called a Tertian; and when it attends on the first and fourth day, with an interval of seventy-two hours, it is named a Quartan. The Tertian type is most apt to prevail in the Spring, and is the most frequent form of the disease. The quartan principally prevails in Autumn, and is the most obstinate and dangerous form of the disease. The Quotidian is more apt than the others to assume the continued type. Of the Quotidian, Tertian, and Quartan Intermittents, there are several varieties and forms; as the double tertian, having a paroxysm every day, with alternate paroxysms similar to one another. The double tertian, with two paroxysms on one day, and another on the next; The double quartan, with two paroxysms on the first day, none on the second and third, and two again on the fourth day.

The double quartan, with a paroxysm on the first day, another on the second, but none on the third day. The triple quartan, with three paroxysms every fourth day. The triple, with a paroxysm every day, every fourth paroxysm being similar. When this fever prevails in the spring of the year, it is called Vernal; and when in the Autumn, Autumnal. They often prove obstinate, and are of long duration, in warm climates; and sometimes resist every mode of cure, so as to become very distressing to the patient, and often give rise to other chronic complaints, but more particularly anasarcous swellings and enlargements of the Liver, or Spleen. There are other forms of the disease, as Quintans; where the fit does not return until the fifth day, Septens, where its return is not until the seventh day, Nonans, where the intermission continues until the ninth day. or into Sextans, Octans, and Decans, which prolong their intermissions until

the Sixth, Eighth, and Tenth days.
It seems to be generally acknowledged, that Marsh Miasmata, or the effluvia arising from stagnant water, or marshy ground, when acted upon by heat; are the most frequent exciting cause of this fever.
We are not acquainted with all the circumstances which are requisite to render Marsh Miasmata productive of Intermittents.
According to observations made in fenny districts; it has been ascertained, that Marsh Miasma, when much diluted with aqueous exhalation, as in summers where an unusual quantity of rain has fallen, are nearly inert; but when arising from stagnant waters of a concentrated foulness, in consequence of great drought and heat in the latter end of Summer and the early part of Autumn, they act with great violence and malignancy.
In admitting the powers of Marsh effluvia

to produce intermittents, we ought not, to look on them as their universal cause, since it is found that persons residing constantly in the most healthy part of cities, and far remote from marshes, are sometimes attacked by them. The testimony of unquestionable writers, proves that febrific miasmata may arise, under certain conditions, from almost any soil, and these febrific miasmata may be wafted by currents of air to a distance far exceeding what has been generally admitted upon this subject.

The heavenly bodies have been supposed by some physicians, to have a considerable influence on intermittent fevers, particularly in warm climates. Dr Lind mentions, that eight seamen were seized, with a return of their fevers exactly at the moment of the beginning of an eclipse; and others have cited cases, where persons have been seized with intermittents

at the full and change of the moon.

Many of these observations have, however, on a more particular scrutiny, been referred to the tides, which, in warm climates, sometimes rise to a prodigious height, at the new and full moon, and leave a great extent of marshy ground, the exhalations from which excite the disease; and it has been found, that, by removing to a proper distance from these, the disease was prevented, although the influence of the moon remained the same.

People in warm climates usually take their exercise early in the morning, or in the evening, being prevented in the day by the excessive heat; the cool and damp air, to which they are thereby exposed, often produce fevers, which have absurdly been attributed to the influence of the moon.

A similar explanation may be given of the influence which the winds are said to have on fevers; In marshy countries they produce

intermittents, when they blow over the marshes, and cease to spread when the wind changes its direction.

A watery, poor diet, great fatigue, long watching, intemperance, grief, much anxiety, debility, exposure to cold, lying in damp rooms, or beds, wearing damp cloaths, or warm, moist, or cold damp atmosphere, the suppression of some long accustomed evacuation, the eruption of Eruptions, and preceding disease have been ranked among the exciting causes of this fever: but it is more reasonable to suppose that these act only by inducing that state of the body which predisposes to these complaints.

One peculiarity of this fever is its great susceptibility of a renewal from very slight causes, as from the repetition of the original exciting cause; It would appear likewise, that a predisposition is left in the habit, which favours the recurrence of the disease.

A deranged state of the stomach and primæ via is generally considered to be the proximate cause of an intermittent fever.

The paroxysms of an intermittent are divided into three stages, which are called the cold, the hot, and the sweating stages.

The cold stage commences with languor, a sense of debility, and sluggishness in motion, frequent yawning, and stretching, an aversion to food; the face and extremities become pale, the features shrink, the bulk of every external part is diminished, and the skin over the whole body appears constricted as if cold had been applied to it; At length the patient feels cold, and universal rigours come on, the respiration is short, frequent, and anxious; the urine is almost colourless, sensibility is greatly impaired; and, the pulse is small, frequent, and often irregular. In a few instances, drowsiness and stupor have prevailed in so high a degree,

as to resemble coma, or apoplexy; but this is by no means usual. These symptoms abating after a short time, the second stage commences with an increase of heat over the whole body, redness of the face, dryness of the skin, thirst, pain in the head, throbbing in the temples, anxiety, and restlessness, the respiration is fuller and more free, but still frequent; the tongue is furred, and the pulse becomes hard, and full; if the attack has been very severe delirium may arise.

When these symptoms have continued for some time, a moisture breaks out on the forehead, and by degrees becomes a sweat, and this at length extends over the whole body; as this sweat continues to flow, the heat of the body abates, the thirst ceases, the urine deposits sediment, the respiration is free and full, and most of the functions are restored to their ordinary state: except a weak and wearied condition.

This disease prevails in different degrees in different persons, the stories of them may be more or less complete; the several stages, in the time they occupy, may be in different proportions to one another.

After a specific interval, constituting the intermission; according to the species of the ague a fresh paroxysm commences in the manner before described. There has been known to take place on the attack of an intermittent, such a prostration of strength as to cut the patient off at once, but this seldom happens. Patients are seldom destroyed in intermittents, from general inflammation, or from a fulness of the vessels, either of the brain, or of the thoracic viscera, as sometimes happens in a continued fever; but when their duration is of any length, they are apt to induce other complaints, such as loss of appetite, flatulency, scirrhus of the liver and Spleen, Dropsical swellings, and general debility, which, now and then prove fatal; in warm climates

particularly, intermittents are apt to terminate in this manner, if not speedily removed; and in some cases they degenerate into continued fever. When the paroxysms are of short duration, regular in their recurrence, and leave the intervals free, we may expect a speedy recovery; but when they are long, violent, and attended with much anxiety and delirium, the event may be doubtful. Other unfavorable symptoms are, great prostration of strength, vertigo, fœtid excretions, the presence of Dysentery, Cholera Morbus, Enlargement of the liver and spleen, inducing Dropsy or Jaundice, and convulsions occuring during the paroxysm preceded by coma.

Examinations, of those who have died of intermittent fever, show a morbid state of many of the viscera of the Thorax and Abdomen; but the liver, spleen, and Mesentery, are usually most affected. The indications of cure in the treatment of intermittents, are, first, to put

as speedy a stop as possible to the fit, when it has taken place, and, secondly, during the intermission to prevent its return, at the usual, or any after period, by exciting a new action in the system, by administering certain remedies at the commencement or immediatly before the accession of the cold fit, thereby destroying the morbid state of the system induced by the cause of the disease, and by invigorating the body. To effect the first of these intentions it is proper to have recourse to warm diluent liquids, artificial warmth, the pediluvium, fomentations to the feet, and cordial diaphoretics. Opium given before the expected paroxysm, or after it has taken place will generally, put a stop to this stage or greatly mitigate it, and lessen the hot stage, and bring on the sweating stage; the dose of the tincture is from thirty to ninety drops for an adult, and of opium from one to three grains. A few minutes after the exhibition of the opiate,

there is generally an exhilaration of the spirits, which in general is quickly followed by a relaxation of the surface, the countenance, looks cheerful, and a flush is spread on the cheek, the pulse, from being weak, quick, and sometimes irregular, becomes less frequent, full and equal; an agreeable warmth is diffused over the whole body and every disagreeable feeling vanishes; sleep now and then follows a large dose, this seldom happens. On the return of the paroxysm, on the following day or not, according to the species of the intermittent, it will be proper to repeat the opiate, in the same manner as before, and it will in general be attended with equal success; so that the patient will seldom experience much trembling or shaking.

Dr G Hawson says he used the following prescription with more success than any other Medicine;

℞ Subcarbonatis Ammonia. Camphoratum gr v.
Confectio aromatica ℥i. M. ft.

Sulphuric Ether given in the quantity of a drachm for a dose, on the approach of the cold fit, has been found in some instances to prevent the accession of the hot one: to be repeated on the approach of the next fit, bark and the other tonics are to be given in the intervals.

We are informed by Dr. Mellie. of the good effects of compression by the tourniquets, and several instances are given of this fact; the plan pursued by him was to apply the instrument on one thigh and on the arm, of opposite sides, at the same time. In two minutes after the application of the tourniquets, the shaking and other symptoms of the cold stage entirely ceased, a mild hot stage was induced and the patient found himself quite relieved; After suffering the instruments to remain on for about fifteen minutes, they were removed, and the cold symptoms did not return.

By administering an emetic immediately before

the accession of the cold stage, we may sometimes be enabled to destroy the morbid state of the system, and thereby prevent a return of the paroxysm. Dr Thomas, in speaking of affusion of cold water, says he has tried it, two or three hours before the expected accession of the paroxysm with some success; the morbid coloration in these fevers has been broken by putting the patients under a copious shower-bath in the hot stage of the paroxysm.

We may presume that by the before mentioned remedies, we have a knowledge of powerful medicines for cutting short the cold stage of an intermittent; and of rendering the hot stage both milder and of shorter duration each time of its return; should we, however, be disappointed in our expectations, and the febrile symptoms run high, we may then advise the the use of diaphoretics, in small and frequently repeated doses; ℞ Succ. Limon. ℥ss. Potass. bicarbonatis ʒi. Aq.-

Mentha ℥ij. Tartris. Antimoni. gr vi. Syrup ℥iij. M. ft. Haustus. to be repeated every two hours. Or — Spt. Nitri. Dulcis. ℥ij. Vini Antimoni. ℥ss. M. ft. haustus. to be repeated every hour. Or. Pulv. Ipecac. Comp gr v. every hour. and to increase their effect, the patient should be directed to drink frequently of tepid drinks.

Where there is nausea and vomiting, the stomach may be cleansed with chamomile tea.

If attended with a cough, and pain in the side affecting the breathing, we may recommend the application of a blister; and should they experience no relief from the remedy, and if there is inflammatory action, it may not be improper to take away a small quantity of blood. If the head becomes much affected either during the paroxysms or the intermissions, the application of a blister to the back of the neck, and leeches, or cups to the temples, will be most proper.

Dr. Lind, is an advocate for the exhibition of opium in the hot fit: he tells us that when given half an hour after the commencement of the hot stage, it generally afforded immediate relief, and he observed the following effects to ensue: First, It shortened and abated the fit; and this with more certainty than an ounce of the bark, was found to effect the disease. Second, It generally gave a sensible relief to the head, took off the burning heat of the fever, and occasioned a profuse sweat, this sweat was attended with an agreeable softness of the skin, instead of the burning sensation which affects patients sweating in the hot stage and was always more copious than in those who had not taken opium. Thirdly, It often produced a soft and refreshing sleep to a patient tortured in the agonies of the fever from which he awaked bathed in a sweat, The Doctor observes, that the effects of opium are more uniform

in intermittent fever, than in any other disease, and its effects are more quick and sensible than any other medicine and preserved the constitution so entirely uninjured, that, since he used opium in agues, a crapsey or paralytic has seldom attacked any of his patients in this disease. When opium did not abate the symptoms of the fever, it never increased their violence; on the contrary, most patients reaped some benefit from an opiate given in the hot fit, and many of them bore a much larger dose at the time than they could at any other; And he offers it as his opinion, that opium in this disease is the best preparative for the bark, as it not only produces a complete intermission, in which case alone that remedy can be safely administered, and occasioned such a salutary and copious evacuation by sweat, as generally to render a much less quantity of bark requisite.

An emetic or purgative is generally necessary,

as a preliminary measure; to cleanse the primæ viæ, before the exhibition of the bark; besides the evacuation of the primæ viæ, venesection is occasionally demanded; in the commencement of this disease, there is commonly, more or less, inflammatory action, without the loss of blood, in most cases, the bark would probably be rejected, and consequently of no use - or, if retained, it could only have the effect of aggravating the disease.
When we obtain an intermission, the cinchona bark is to be given in large doses; one or two drachms, of the powder, may be taken every hour, if the stomach will bear so much, as the benefit to be expected from this medicine, greatly depends on a large quantity being administered in a short space of time; five or six ounces of bark taken in a few days, will be attended with a much better effect, than perhaps as many pounds taken in the course

It is much better to rub up a little opium with the mucilage, because the menstruum of laudanum irritates the rectum.

of some weeks. If it will not sit easy on the stomach in substance, we must be content to substitute a decoction, infusion, tincture, extract, &c. The sulphate of Quinine, is a good preparation of the bark, for children, and those persons of a weak and delicate or irritable stomach, Dose one grain three times a day. dose 1. every hr or two hours
If all the forms which have been mentioned should be nauseated and rejected by the stomach, we may advise the bark to be given in clysters, for this purpose, about a drachm of its extract, dissolved in a sufficient quantity of water, or two or three drachms of the powdered bark, in the smallest quantity, of Mucilage of Gum-Arabic, Starch, or flaxseed, &c. that it may operate as slightly as possible, as an extraneous stimulus; and, to do away irritability, it is proper to add a few drops of laudanum each time. With children who cannot be prevailed on to take the bark, we may administer it with much

efficacy in this way, repeating the clyster every four hours. In the external application of the bark, different modes have been proposed. Baths of a warm decoction, either as a pediluvium, semicupium, or large enough for the immersion of the whole person except the head. It has also been applied in the dry state; Darwin, says that if the powder be strewed abundantly in a bed, in which a patient lies, it will cure ague and fever. The bark jacket is another form of applying it, and it is said to have done some good. In most intermittents it would perhaps be preferable to unite opium with the cinchona, as it would enable the stomach to bear much larger dose of the latter, and likewise increase its good effects.

Various substances of either an astringent, or aromatic nature, such as alum, kino, and the various preparations of iron, nutmegs, cloves, and snake-root, are have been joined to the bark, with

a view of increasing its powers: but as these lessen its dose by their bulk, it will be best to give it by itself, unless it occasions a purging, and then about eight or ten drops of L. opii. or a drachm of the Tr. Kino. may be added to each dose. On the contrary should it produce costiveness, some gentle laxative may be taken occasionally. In intermittents of long continuance, when the person is advanced in years, and weak, the habit phlegmatic, the season rainy, and the situation damp, it will be proper to make an addition of Snakeroot and some warm aromatic to the cinchona. ℞ Pulv. Cort. Peruv. ℥ss. Pulv. Serpentaria. Virginia ℥ij. Carbonatis Sodæ ~~vel~~ Potass. gr XL. M. ft. Pulv. No IV. to be taken in the course of the day. Or if we want a more powerful stimulant. ℞ Pulv. Cinchona ℥iij. Serpentaria ℥iii. ~~Cloves~~ Cassiæ aromatici ℥iii. Zingiberis ℥iii. Carbon. Sodæ vel. Potass. ℥iii. M. ft. Pulv. No XVI. one to be taken every hour or two during the intermission.

or if we want an astringent joined to it, ℞ Gum.-Kino, ℥iii. Pulv. cort. Aurant. ℥ss. Opii gr. ii. M. ft. div. in Pulv. No XII one to be taken every hour or two during the intermission.

In cold climates, it will in general be advisable to wait for a perfect and regular intermission before we give the bark: but in warm climates, where intermittents are apt to degenerate into continued fevers or remittents, and, in which the habit is more irritable and weak, it will be right to administer it, even on the most imperfect intermission.

And it will not be sufficient, that the recurrence of paroxysms be stopped for once or twice by a use of the bark; a relapse is commonly to be expected, and it should therefore be prevented by a continuance of the medicine at proper intervals; for some days, or even weeks after the disease appears to be removed, also in damp weather and during the prevalence of an easterly wind.

There are no less than twenty-five distinct species of cinchona, independent of those added by Humboldt and Bonpland. The red or cinchona oblongifolia. Yellow or cordifolia. Pale or lancifolia. are the three in use, but a decided preference is given to the red, and yellow. It is stated that the last is bitterer, and more astringent, than the other sorts; the decoction and infusion of it are less liable to undergo fermentation.
Quassia has been used as a substitute for the cinchona, it is very inferior, and is usefull only in the convalescent state, where a simple bitter is wanted.
Cusparia Febrifuga. or. Cort. Angustura, is used sometimes, and with some success, dose from a scruple to a drachm.
Swietenia Febrifuga, a species of mahogany, so called after, Van Swieten, was greatly extolled by Dr Kerburgh in intermittents; he says, that its bitter and astringent qualities are more

intense than those of the cinchona, its active parts are more soluble in watery menstruums, and are not so apt to spoil, spiritous and watery preperations of it bear being mixed in any proportion without decomposition; and its antiseptic powers are stronger.
As a tonic and febrifuge, the cornus florida, and cornus cericea or, dog-wood, red willow; red rod, &c; have been much employed and with considerable success in fever and ague;
The bark of each species of the Cornel may be given in any of the forms in which the cinchona is used, and in the same dose.
Serpentaria Virginiana, is not much use by itself, but in combination with bark it is in general use, Sydenham, says, as a general rule, in all cases where wine is required with bark, the effect will be greatly increased by adding serpentaria, Dose from twenty to thirty grains.

The radix rhatania is another substitute which has been proposed for the cinchona; twenty-grains of the powder for a dose.

Eupatorium Perfoliatum. Thoroughwort, or Bone-set is a remedy generally employed in this fever by the poorer class of society; and very seldom fails of effecting a cure, it may be given indiscriminately in any stage of this fever; by different modes of exhibition, it proves tonic, emetic, purgative, diuretic, and actively diaphoretic; given as a warm beverage, either in infusion or decoction, one ounce to a pint of boiling water, give a wine glass-full every fifteen minutes, it will puke, or stimulate the surface or kidneys, in cold decoction, or, what answers better in powder, it hardly ever fails to evince tonic effects, in doses of from twenty to thirty grains every two hours; it is the very best substitute for the cinchona, in intermittent fever.

Charcoal is a considerable tonic, and is much

employed by the physicians in Sicily in the cure of intermittents; and where it is complicated, with diarrhœa or dysentery, and with much success; It is administered in doses of from a scruple to a drachm, during the apyrexia, observing in every respect, the same rules, as in the employment of the cinchona.

In intermittents where from flatulency, distention of the abdomen, or retention of faeces, it becomes necessary to have recourse to laxatives, we may employ something of a warm aromatic nature, which should be taken during the intermissions, so that its operation shall have ceased before the accession of the next.

℞ Sr. Rhei ℥ss Infus. Senna ℥ss Spt Lavend. Comp. ℥ss. M. ft. Haustus.

It often happens, when intermittents have continued a long time, that Scirrhosities of the Liver and Spleen take place, which are vulgarly denominated Ague-cakes, these complaints have been attributed to an improper use of the cinchona;

but they evidently arise from the great quantity of blood which is thrown on these parts during the cold fit, they are often difficult to remove, although a stop is put to the fever; in such cases it will be proper to give deobstruents. ℞. Nitrici acidi ℥ss — h. Cinchona. Comp. ℥iv. h. Rhei. ℥ss. Syrup. Simplicis. ℥iii. M. ft. to be taken in the course of the day.
If this fails we must have recourse to mercury; a small dose should be taken every night, so as just to affect the mouth. ℞ Hydrarargyri. gr ii. Opii. gr i. to be taken at bed-time. or Blue pill gr iii Opii gr i. to be taken as the former.
If the patient cannot take this medicine internally, we must substitute its external use in the form of unction, rubbing into the groins about a scruple of the unguentum hydrargyri portion every night at bed-time; Mercury, it is sayed, in some cases has proved unsuccessful in these enlargements, which have afterwards been removed by other remedies; two

cases are recorded by Dr Griffith which resisted the mercurial treatment, and were afterwards removed by the Decoctum inspissatum Cornii; dose half a grain, to three grains, three times a day, of the powdered leaves, gradually increasing the dose untill some very positive effect is produced, and the only circumstances which call for a reduction of it, are giddiness, nausea, or purging; when these come on, we must omit the medicine for a time, or lessen the quantity.

Blisters no doubt would prove highly beneficial, applied as a preventive of the paroxysm, when so managed as that the full impression should be felt at the accession of the paroxysm; their mode of action in the cure of this disease is by the irritation which they induce, interrupting the train of morbid association, constituting this form of fever, so as frequently, to put an end to the worst cases of it; they are more demanded, in those cases of

the disease attended by visceral congestions, or indurations of a painful and inflammatory nature, little indeed will tonics avail, untill such obstructions are removed, and, with this view, a succession of blisters over the affected part ought never to be neglected.

Tumors of the abdominal viscera, by pressing on some of the ducts, which carry bile obstruct it from getting into the duodenum: it is therefore absorbed, and produces Jaundice without any concomitant dropsical symptom; or along with it ascites, when this happens the disease frequently proves fatal.

The treatment in such cases, should be to remove the tumors, which is to be done by the exhibition of mercury, and the application of blisters over the part.

Dropsy arises sometimes from debility, ~~and is accompanied by the long continuance of the disease,~~ in these cases it may be removed by the use

of cinchona, together with stomachic bitters, diuretics, and chalybeates.

When diarrhoea accompanies — disease, it sometimes proves more severe during the intermissions; and less severe, or ceases altogether, during the time of the paroxysm. In other cases it is most severe in the paroxysm. Such diarrhoea tends to increase the weakness considerably, and not unfrequently occasions dropsical appearances; At first, œdematous swellings appear in the lower extremities; these increase, rising up to the thighs, and then to the integuments of the abdomen; Ascites may also take place. If astringent remedies be employed, so as to put a stop to the diarrhoea, the dropsical appearances usually increase, and the intermittent continues to recur, although often very obscurely, and very irregularly. If the diarrhoea be permitted to go on, or if it has been stopped, and is allowed to return by leaving off the astringents, the weakness increases

in such a degree as to destroy the patient.

If the cinchona be exhibited, it often increases the diarrhœa without having the effect of preventing the irregular returns of the attacks or exacerbations

In this case, Dr Fordyce says it will be best to clear the primæ viæ, by employing about twenty-five grains of rhubarb, after its operation is over, to exhibit cinchona in pretty considerable quantities, such as a drachm every three hours, and to give at the same time a grain of Ipecacuanha with fifteen drops of h. Spir. together with a moderate quantity of any warm spice, every four hours.

In some cases of intermittents which have continued a great length of time, owing to their having been neglected in their beginning, or where the cinchona has failed to procure the desired effect, preparations of iron and copper have been administered with success.

The Oxydum Zinci, given in the dose of two grains thrice a day, has removed obstinate intermittents when the usual remedies have failed. The Sulphate of Zinci has been used likewise with some success.

The Sulphate of Copper, given in doses of a quarter or half a grain every four or six hours, is also said to have proved very efficacious in some cases of obstinate intermittents;

℞ Sulphas Cupri, eight grains, ext Cort Peruv. sixty-four grains, Syrup q. s. in. div. in pill thirty-two give one four times a day.

Cuprum Ammoniatum has been given as a tonic with advantage. ℞ cupri. ammoniatici. ℥i. ext Cort Cinchona ℥ii. Syrup q. s. in. pt. div in pill no twenty-four, take two or three every night at bed-time gradually increasing the dose.

Arsenic has been strongly recommended as a remedy in intermittents, and is undoubtedly a very powerful remedy, and I have

never known it to fail in the most obstinate cases of this disease; Dr Fowler seems to have been the first physician to advise this medicine in agues, and on his recommendation many practitioners have used it, agreeable to his directions, with the most pointed success. The preparation he advised is now introduced into the different Pharmacopoeias under the name of Liquor arsenicalis; the dose is from two to twelve drops, once, twice, thrice, or oftener in the day, according to the age, strength, &c of the patient, eight days administration of the medicine, in the manner just mentioned, will generally be found sufficient for the radical cure of an intermittent; vomitings, gripings, swellings, and loathing of food, are the troublesome symptoms which now and then are produced by use of the arsenic, they generally disappear on a discontinuation of the drops,

or only require the exhibition of gentle opiates, or some warm cathartic, as the Æthiop: Comp:
From the observations which have been made on the use of arsenic in agues, there seems just grounds for believing it to be the most powerful of the remedies which have been recommended in this disease; Dr Thomas informs us that the inhabitants of a considerable portion of the country which surrounds Salisbury, the place of his residence, are very subject to this fever, and he says that he has never been disappointed in removing even those of an obstinate nature, by the arsenical solution, it is his constant practice to conjoin four or five drops of ℞ Opii with each dose of it.
In Lincolnshire, which is a fenny country, where agues are very prevalent, it is universally used, and with the most uniform success. Arsenic has long been used by empirics with

the greatest success in intermittents, under the appellation of the ague-drop. The manner in which arsenic acts in the cure of intermittents, Dr Darwin thinks, cannot be by its general stimulus, because, no intoxication or heat follows the use of it; nor by its peculiar stimulus on any part of the secreting system, since it is not in small doses succeeded by any increased evacuation or heat, and must therefore exert its power on the absorbent system; he suspects its success in the cure of agues to depend on its stimulating the stomach into stronger action, and thus by the association of that viscus with the heart and arteries, prevents the torpor of any part of the sanguiferous system.

There are a number of combinations in which we may administer the arsenic; ℞ Solutio arsenicalis ℥j. ʒh Opii ℥ii. ʒh Cinchona ℥v. M. ft. a teaspoonful to be taken three times a day.

℞ arsenici . acidi gr ii. opii . . gr viii. ext. cort. cinchonæ ℥ss. m. ft. massa div in pill No 32 one to be taken three times a day. ℞ arsenici . acidi gr ii. pulv. opii gr viii. sapo Castill gr xxii. m. ft massa div. in pill thirty-two, one to be taken three times a day. ℞ arsenici : acidi gr ii. sapo: cinnamomi gr xxviii. m. ft. massa div. in pill thirty-two, one to be taken three times a day.

I am informed by Dr E. G. Howell, that he made eleven perfect cures out of fifteen cases of intermittents, by the application of the Vitae Emetic Plaster. he says that he used no other medicine in the eleven cases, I am not able to explain their mode of action in the cure of this disease, I suppose, they act nearly on the same principle as a blister, only producing a greater degree of irritation. I have noticed in this fever that when an eruption breaks out, about the mouth, it is a favourable symptom and they generally recover

pretty soon afterwards.
Should the patient be incommoded by a giddiness of the head, which is not uncommonly the case even after a slight attack of this fever; it may generally be relieved by volatiles and cinchona in wine.
During the fits of an intermittent, the patients strength is to be supported by food of a light and nutritive nature, such as the preparations of barly, sago, panado, and the like; but when the fit is off, he may be allowed animal food, and a moderate use of wine; a change of air and situation has sometimes a happy effect in removing an intermittent, particularly if from a low marshy country to an elevated one. In autumnal intermittents it has been found, that the air of a large city or town is more favourable than that of the country, owing most likely to the great number of fires that are always burning.
When none of the viscera are affected, cold—

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bathing may be used with advantage.

Having thus brought to a close, this imperfect treatise on intermittent fever; I hope you will treat it with lenity; Accept my thanks for the information, I have received from your lectures; on the Theory and Practice of Medicine; to each of the professors of this university individually, I beg leave here, to express the esteem, and sincere and grateful acknowledgments, of a pupil, for the many and great opportunities of improvement; which your lectures have afforded me. Accept my assurance, that I wish you may continue to enjoy, all the pleasure of success; which you so deservedly merit.

Fever